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CENTRAL INTELLIGENCE AGENCY

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STRATEGIC VALUE OF MINING MACHINERY TO THE SOVIET ORBIT

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W A R N I N G

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The material in this report, which contains information available to CIA as of 1 June 1951, was originally prepared in fulfillment of a Munitions Board request for the evaluation of certain items currently on the export control lists. The report has not been coordinated with the intelligence organizations of the Departments of State, the Army, the Navy, and the Air Force.

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STRATEGIC VALUE OF MINING MACHINERY TO THE SOVIET ORBIT [1]

1. General.

The Soviet Orbit does not manufacture enough mining equipment to meet its needs and imports a sizable amount from the West. An increase in domestic output would require the diversion of plant capacity and strategic materials now used in the production of other highly strategic commodities.

Western export controls on mining equipment would hamper the industrial development of the Soviet Bloc to a considerable extent. The special types of mining equipment which are secured from the West save considerable time and manpower in mineral production. The denial of such equipment would force the Orbit either to mine by difficult processes when unusual conditions are encountered or to divert scarce resources and convert some machinery factories to the production of small quantities of specialized mining devices, with a consequent loss of productive efficiency. Furthermore, because mining equipment presently used in the Soviet Bloc includes machinery imported from the US and from several European countries, an embargo on replacement parts would compel the Orbit to manufacture such parts domestically. Moreover, the Orbit lacks enough qualified personnel to manufacture mining machinery and replacement parts as fast as required without diversion from other strategic industries.

1. The types of items that are particularly under discussion are US List I-A (embargo), items A301, A302, A303, and A304, which include combination coal-cutting and loading devices, continuous and intermittent; all types of coal-cutters; all underground types of loading machines for rock, coal, and ore; and all underground trackless mining auxiliary units. However, other types of US mining equipment are also being denied to the Soviet Bloc despite the fact that they are technically on US List II-B (quantitative control). Such equipment includes power-driven hoisting equipment, 500 h.p. and over, for mines and controls for this equipment; conveyor belting; crushing equipment, all types except for food processing; and equipment for beneficiating (cleaning and grading) coal, minerals, and ores. Control of the beneficiating equipment is particularly important, since the coal marketed in the USSR is of a generally poor quality because of inadequate cleaning and grading as the coal comes out of the mine.

Imports of mining equipment from the West would materially increase the mineral production of the Soviet Bloc, particularly strategic items. Such equipment, consisting of loading devices and underground trackless mining auxiliary units, is used in copper, lead, zinc, and uranium mines and for the mining of nonmetallic minerals such as potash and phosphates. Could such mining equipment be obtained, it would assist the Bloc in achieving the goals for increased production in the Polish zinc mines and the Hungarian bauxite mines and would speed up uranium production. Uranium mining is already mechanized in East Germany and Czechoslovakia, the former being the principal source of the USSR's uranium supply, and production is also under way in Bulgaria, Poland, and Hungary.

2. Supply Position of the USSR.

The USSR produces various types of mining equipment, including about 14 models of combination coal-cutting and loading devices, none of which appears to copy US designs. Nearly all of these models are original designs and are being produced in quantity. The USSR also produces six models of chain cutters, some of which are copies of US-patented Sullivan machines, and three models of loading machines. One of these is a copy of a US-patented Joy S-153 model, and the other two models are copies of US machines used for loading rock. Underground trackless mining auxiliary units are probably not produced in the USSR. It is unlikely that they are much used in Soviet coal mines, because conditions are generally unfavorable for their operation, although they are usable in other types of mines. The USSR lacks equipment for cleaning and grading the coal after it is mined, so that the coal marketed is generally of poor quality.

Imports of mining equipment have been sizable. In 1946 the US supplied 310 coal-cutters to the USSR; in 1947, 105. These cutters, when properly operated, produce at least 50,000 tons of coal per machine per year, or about 20 million tons for the 415 machines. UK mining machinery exports to the USSR amounted to $195,000 in 1950, while Italian exports in the first 6 months of 1950 amounted to $938,000. However, export data are not reported in sufficient detail by various European countries, and complete information, therefore, regarding recent exports of mining equipment to the USSR is not available.

The USSR is particularly stressing the mechanization of coal and other types of mines and therefore has a continuing need for mining equipment and replacement parts. For example, the goal for coal production in the USSR is 500 million tons per year as compared with 262 million tons produced in 1950. This goal is to be achieved by 1960, or at least by 1965, and it is to be reached through increased labor efficiency and increased mechanization of the mines, eliminating the present excessive use of manpower. At the present, however, the USSR is experiencing difficulties in its program of mechanization and has failed to meet its planned quota for the production of mining equipment.

Manufacturing the equipment and replacement parts necessary to increase mineral production places a heavy burden on the Soviet machine industry, and importation of mining equipment from the West would be of significant assistance. This is particularly true, since Soviet-made mining machinery cannot always be relied upon for intensive usage. Reports indicate difficulties in getting good performance from coal-cutters and combines, mainly because of poor design and manufacture. The USSR, for example, has been unable to manufacture worm gears properly and has failed to use high-grade electrical insulation, proper alloy steels, heat treatment, and other techniques that improve the performance of the finished equipment. The machines, therefore, frequently break down. The Soviets overwork them when operable, do not apply preventive maintenance, and are generally short of spare parts. As a result, a larger inventory of machines and an excessive number of workers are needed to get out the coal. Moreover, the USSR furnished minor quantities of coal-cutters and combines to China, Poland, and Hungary in 1950 which diverted equipment needed in the USSR but which must be provided because the Satellites are not able to obtain adequate quantities of machinery outside the Orbit.

3. Supply Position of Poland.

Although certain types of coal-mining equipment are now being produced within the country, Poland is largely dependent upon foreign sources of supply--principally the UK and other European countries--for the maintenance and improvement of its mining industry. Since the end of World War II, Poland has ordered mining equipment from the UK, chiefly for coal mines, valued at several million English pounds. The USSR and Czechoslovakia also supply small quantities of mining equipment, and a large number of coal-cutters came from UNRRA. However, Poland is not getting nearly as much equipment as it needs or would be willing to buy, and this lack greatly hinders its coal mining. Increased imports of such equipment would accelerate attainment of Poland's 1955 production goal of 100 million tons of coal per year (1950 production was approximately 78 million tons). Since much of its equipment comes from various European countries, there is the chronic difficulty of obtaining replacement parts. In the event of war, this would become more acute, and Polish requirements would have to be supplied by the USSR, thus adding to the strain on the Soviet machine industry.

4. Supply Position of the Other Satellites.

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The other Satellite countries are dependent to some extent for mining equipment on the USSR and on the West. [redacted]

Czechoslovakia is the only substantial coal producer except Poland among the European Satellites. It manufactures some coal-mining equipment but also imports some from the USSR and from the West.

5. Position of Western Europe.

The shortage of coal in Western Europe has become more acute in recent months because industrial demand has been increasing faster than coal production, a situation which Poland has taken advantage of by increasing its selling price for coal to double that of the summer of 1950. The demand for coal will continue to be great because of Western Europe's growing defense production, and Western European countries therefore probably favor the sale of coal-mining equipment to Poland, on the theory that increased Polish production would result in more coal becoming available and at lower prices.

Although an increase in the Polish output might provide more coal for Western Europe in the immediate future, this would probably not be the case in the long run. Under the new Five Year Plan for East Germany, large quantities of better-quality coal will be needed for industrial development. East German coal resources are very low-grade, and any increase in Polish coal production would therefore probably be allocated to East Germany to carry out the Plan and, indirectly, to bolster East German armament production. For this reason, Poland cannot be counted upon to make any increased coal production available to Western Europe. In the event of war, and possibly earlier, the entire Polish coal output would, in any case, go exclusively to the Soviet Orbit.